



Integrated Public Alert and Warning System

CMAS/PLAN Updates to the

Joint Special Interest Group

July 20, 2011



FEMA

Agenda

- ▶ Quick overview of IPAWS [1 min]
- ▶ CMAS/PLAN overview [5 min]
- ▶ What do you need to do to use IPAWS? [3 min]

The Evolution of Emergency Alerting



1951 - 1963
CONELRAD

Originally called the “Key Station System,” the **CONTROL** of **ELECTROMAGNETIC RADIATION** (CONELRAD) was established in August 1951.

Participating stations tuned to 640 & 1240 kHz AM and initiated a special sequence and procedure designed to warn citizens.

1963 - 1997
EBS

EBS was initiated to address the nation through audible alerts. It did not allow for targeted messaging.

System upgraded in 1976 to provide for better and more accurate handling of alert receptions.

Originally designed to provide the President with an expeditious method of communicating with the American Public, it was expanded for use during peacetime at state and local levels.

1997 - 2006
EAS

EAS jointly coordinated by the FCC, FEMA and NWS.

Designed for President to speak to American people within 10 minutes.

EAS messages composed of 4 parts:

- Digitally encoded header
- Attention Signal
- Audio Announcement
- Digitally encoded end-of-message marker

Provided for better integration with NOAA weather and local alert distribution to broadcasters

2006
IPAWS

IPAWS modernizes and integrates the nation’s alert and warning infrastructure.

Integrates new and existing public alert and warning systems and technologies thru adoption of new alert information exchange format - the Common Alerting Protocol or CAP

Provides authorities a broader range of message options and multiple communications pathways



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IPAWS Vision

*“Timely Alert And Warning To American Citizens In
The Preservation of Life And Property”*

Integration of public alert communications systems:

- ▶ Facilitate single emergency alert message delivery to all available public dissemination channels
- ▶ Easier to use for alerting authorities



**Alerting Authorities;
Local, State, Territorial,
Tribal, and Federal**



**IPAWS-OPEN
“Alert Aggregator”**



Television



Radio



Cell Phone



Computer



Home Phone

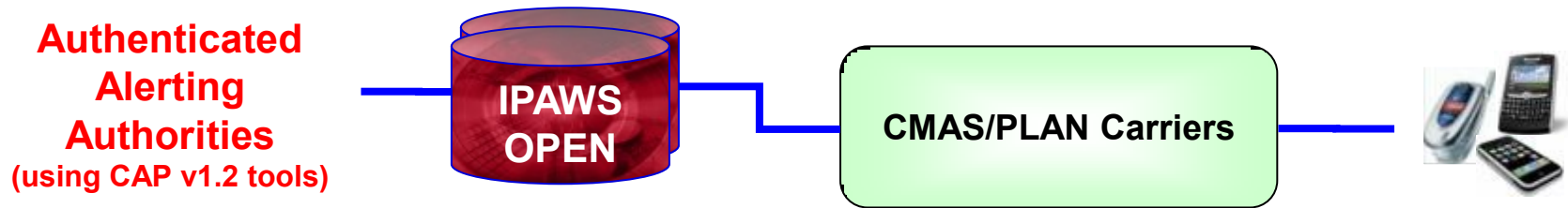


Public Signage

- ▶ *Improves and Enhances* emergency alerting capability in two critical ways:

- increases reliability that affected citizens receive an alert via at least one path
- increases likelihood that citizens reacts to emergency alerts

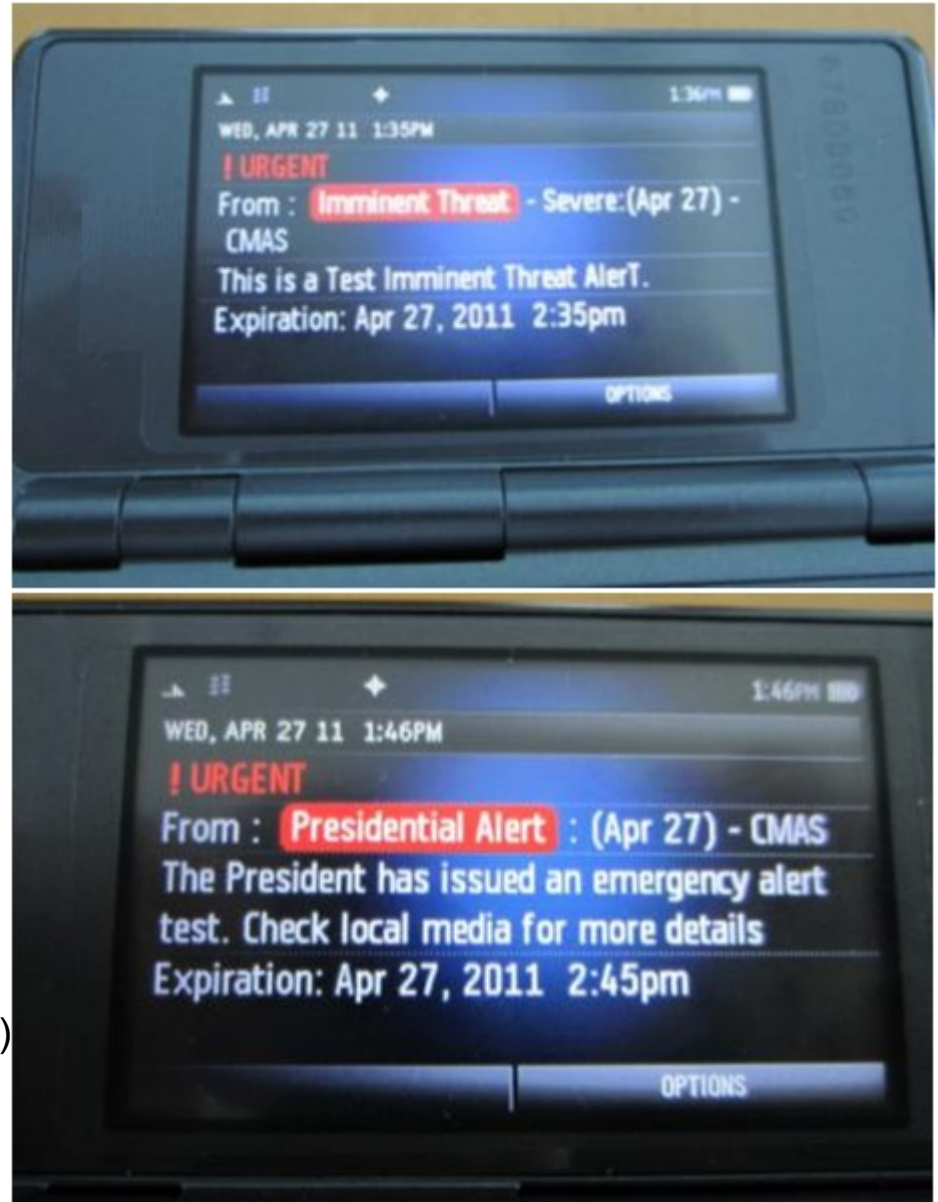
How CMAS/PLAN works



- ▶ System is composed of:
 - CAP alert generation tool (State/local user responsibility)
 - IPAWS-OPEN “alert aggregator and gateway” (FEMA responsibility)
 - Commercial Mobile Service Provider gateway (Carrier responsibility)
 - New alerting service to cellular phones (Carrier responsibility)

How CMAS/PLAN works

- ▶ Cellular Broadcast vs. SMS text
 - No sign-up
- ▶ Geo-targeted to county level
- ▶ Three messages
 - Presidential Message
 - Imminent Threat
 - Urgency, Severity, Certainty
 - **AMBER Alert**
- ▶ Public opt-out
 - Except Presidential message
- ▶ Carrier opt-in
 - 118 “yes”, 24 “yes in-part” (incl. “big 4”)
 - 469 “no”



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www.fcc.gov/pshs/docs/services/cmas/MasterCMASRegistry.xls

How CMAS/PLAN works

▶ 90 character text

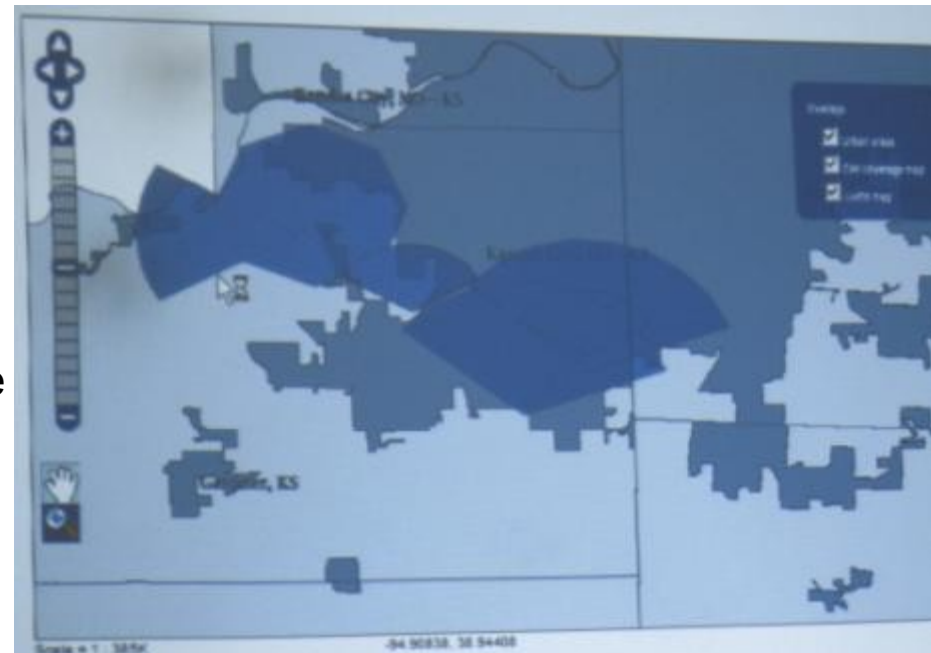
- Intended to “get their attention” and then “refer to news outlets for more info”
- No links, no phone numbers (except AMBER)

▶ Which handsets?

- Several models currently in the wild, capability is turned off
- 3 years for most phones to be capable
- Carriers educate public at point of sale

▶ Which cities?

- New York City and DC, Dec 2011
- Begin nationwide roll-out, Apr 2012
 - Carrier will roll-out at their own pace
 - Contact CTIA for more information



How 90 char text is automatically generated

Example A

WHAT IS HAPPENING		
CAP FIELD	VALUE	TEXT STRING
eventCode	TOR	"Tornado Warning"

WHAT AREA IS AFFECTED		
CAP FIELD	VALUE	TEXT STRING
N/A	N/A	"in this area"

WHEN THE ALERT EXPIRES		
CAP FIELD	VALUE	TEXT STRING
expires	dateTime	"until 3:30PM CDT"

WHAT ACTION SHOULD BE TAKEN		
CAP FIELD	VALUE	TEXT STRING
responseType	Shelter	"Take Shelter Now"

WHO IS SENDING THE ALERT		
CAP FIELD	VALUE	TEXT STRING
sender	string	"OK OEM"

67 chars

Example B

WHAT IS HAPPENING		
CAP FIELD	VALUE	TEXT STRING
eventCode	CEM	"Civil Emergency"

WHAT AREA IS AFFECTED		
CAP FIELD	VALUE	TEXT STRING
N/A	N/A	"in this area"

WHEN THE ALERT EXPIRES		
CAP FIELD	VALUE	TEXT STRING
expires	dateTime	"until 5:00PM EDT"

WHAT ACTION SHOULD BE TAKEN		
CAP FIELD	VALUE	TEXT STRING
responseType	Monitor	"Monitor Radio or TV"

WHO IS SENDING THE ALERT		
CAP FIELD	VALUE	TEXT STRING
sender	string	"NJ OEM"

72 chars

Example C

WHAT IS HAPPENING		
CAP FIELD	VALUE	TEXT STRING
eventCode	RHW	"Radiological Hazard Warning"

WHAT AREA IS AFFECTED		
CAP FIELD	VALUE	TEXT STRING
N/A	N/A	"in this area"

WHEN THE ALERT EXPIRES		
CAP FIELD	VALUE	TEXT STRING
expires	dateTime	"until 12:00PM EDT"

WHAT ACTION SHOULD BE TAKEN		
CAP FIELD	VALUE	TEXT STRING
responseType	Monitor	"Monitor Radio or TV"

WHO IS SENDING THE ALERT		
CAP FIELD	VALUE	TEXT STRING
sender	string	"NYC OEM"

84 chars



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"Tornado Warning in this area until 3:30 CDT Take Shelter Now OK OEM"

"Civil Emergency in this area until 5:00PM EDT Monitor Radio or TV NJ OEM"

"Radiological Hazard Warning in this area until 12:00 EDT Monitor Radio or TV NYC OEM"

CMAS/PLAN Milestones & Activities

- ▶ Commercial Mobile Alerting System Interface Specification (Completed – Dec 2009)
 - Joint ATIS/TIA CMAS Federal Alert Gateway to CMSP Gateway Interface Specification, J-STD-101, October 2009
- ▶ **FEMA memorandum of agreement with 5 major carriers**
 - Sprint, T-Mobile, AT&T, Verizon Wireless, US Cellular
 - Initial interface testing ongoing (completed with Sprint and US Cellular)
- ▶ FEMA IPAWS-OPEN gateway function (end-to-end) initial operational capability online in August 2011
- ▶ Early roll-out, with Sprint, T-Mobile, AT&T, Verizon Wireless support, to New York City and Washington DC areas planned for Dec 2011
- ▶ “roll-out” of capabilities to other areas, dependent on participating carriers

What do you need to do to use IPAWS?

- ▶ CAP-Based Alerting Tool
- ▶ Collaborative Operating Group (COG)
- ▶ Alerting authority through State (and **FEMA training**)
 - EAS, CMAS/PLAN, Social Media (future)
- ▶ Alerting authority through NOAA (and NOAA training)
 - NWEM/HazCollect, NOAA All Hazards Weather Radio



Policy Enforcement



www.fema.gov/pdf/emergency/ipaws/open_developers.pdf

http://www.fema.gov/pdf/emergency/ipaws/cog_moa_app.pdf

www.TBD.gov

<http://www.weather.gov/os/hazcollect/govt.shtml>

Comments and Questions

► **IPAWS Website** - <http://www.fema.gov/emergency/ipaws>

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CMAS Practitioner / Developer Webinar

Brian Josef, Assistant Vice President, Regulatory Affairs

July 20, 2011

Wireless Industry Snapshot

- ❖ 303 million active wireless “connections”
 - ❖ Over 630 Unique Wireless Devices
 - ❖ Over 84% of wireless devices are web-capable
 - ❖ Over 1.2 million apps available, more than 10 billion downloads
 - ❖ Over 2 trillion text messages sent & received in past 12 months
 - ❖ Wireless data use is expected to increase *more than 20 times* from 2010 to 2015, from about 49,000 TB a month to more than 986,000 TB a month



Commercial Mobile Alerting System (CMAS)

- What is CMAS?
 - Voluntary
 - Alert Classes: Presidential, Imminent Threat, and AMBER
 - Geo-targeting
 - Audio attention signal and vibration cadence
 - FEMA as Alert Aggregator & Gateway
- Why CMAS?
 - Avoid “Car Alarm Syndrome” - A Mobile Alert is Important and Unusual
 - National System prevents:
 - Patchwork of Standards & Processes
 - Unmanageable Volume of Initiators



CMAS IS DIFFERENT THAN AN EMERGENCY SMS...



- Limited Mass Distribution (SMS is point-to-point; CMAS is point-to-multi-point)
- Latency/Time Delay (Ex. Biden Announcement)
- Network Congestion (Ex. Presidential Inauguration)
- Limited Geographic Distribution (Ex. Virginia Tech Shooting)

Wireless Industry Actively Engaged in CMAS Development

- Oct. 2007: CMSAAC Recommendations
- Late 2007 – Early 2008: Industry begins evaluating and developing alerting specifications
- April 2008: FCC First Report & Order
- Sept. 2008: Carriers elect to participate
 - 9 of the 10 largest carriers + dozens of smaller carriers = 97% of the population with a CMAS-capable phone will be able to receive CMAS Alerts
- Dec. 2009: Carriers and FEMA have completed standards work for the elements within its control:
 - Service Provider Gateway
 - Infrastructure and Mobile Devices



CMAS Next Steps

- Achieve FEMA Gateway operational capability.
- Wireless provider – FEMA interface testing.
- Alert originators obtain IPAWS training and achieve CAP compliance.
- Wireless carrier deployment / availability of CMAS-capable devices beginning April 2012.



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